Comments on ET Docket No. 05-24
DTV Tuner Requirements

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I submit these comments as a consumer interested in the successful and timely completion of the transition to the ATSC television standard. Since the CEA-CERC petition and the FCC's rulemaking seem to be rooted in consumers' alleged strong preference for television sets without digital tuners, my comments will address the options presented to consumers, and why the typical consumer makes his or her choices. If consumers' preferences can be altered in favor of ATSC sets, the transition to digital/ATSC television can be expedited.

As a starting point, I disagree with CEA-CERC's twisted logic that delaying the onset of a requirement for digital tuners in the most popular 25" to 36" TV sizes to March 2006 will somehow advance the transition to the ATSC standard. That date is a year from now, and without a requirement, many millions of new NTSC sets will be taken home by consumers in that period. Each of those new NTSC sets will compound the quandary faced by the FCC and our friends up on the Hill: how do you appease the millions of American consumers who own perhaps almost-new NTSC sets that will be rendered nonfunctional when analog broadcasts are shut off? Subsidize STBs? A poor alternative.

Right now the problem would seem to be that the typical consumer doesn't understand the profound difference between NTSC and ATSC television sets. The so-called "HD-Ready" digital "monitors" are virtually all NTSC sets, as much as the plain old 480i versions, because they come with NTSC tuners and no ATSC tuners. An ATSC television is defined by the incorporation of an ATSC receiver. If it doesn't have one, then it's not an ATSC set. If it has only an NTSC tuner inside, it's an NTSC set.

My radical suggestion is to tell the consumer the difference between NTSC and ATSC televisions, and explain the ramifications for buying one or the other. And do it quickly. Then let him choose. He'll choose ATSC.

The FCC also states that one purpose of the phased-in digital tuner requirement is "to avoid disruption of the TV receiver market." If this means

avoiding a disruption of the continued sales of NTSC television sets, then the FCC is bound to fail in its regulatory efforts, as this purpose is at odds with the goal of completing a timely transition to the ATSC standard. One goal or the other must prevail.

So why aren't consumers willing to pay a little extra for an integrated ATSC tuner? The short answer is that they are uninformed and misinformed. There is now good information out there but you first have to know to look for it, then how and where to look for it. Lots of people "know" about HDTV, but only a few know the all-critical context.

None of my friends knew anything about the transition to the ATSC television standard until I told them; they had no idea that each TV station is broadcasting two separate signals. Most people think there is only one signal that works with all TV sets, or as I have learned, many have no real idea how the picture gets to the TV set. Newspaper articles on digital television are few and far between, generally don't mention a transition per se, and as a rule are dominated by misinformation. The Sunday newspaper TV program supplement lists only the NTSC channels; the digital channels just don't exist.

At Congressman Upton's February 17 Telecommunications subcommittee meeting (The Role of Technology in Achieving a Hard Deadline for the DTV Transition), Rep. Terry spoke out against the labeling of televisions (educating the public) and claimed the only way to receive over-the-air HD programming was with a special $300 antenna, when in fact the old inexpensive "analog" antenna receives digital signals equally well.

One would hope that someone in his position would not be spreading DTV myths that serve only to discourage consumers from adopting ATSC hardware, but if he doesn't know the facts about digital television, it is not surprising that an ordinary consumer in the hinterlands doesn't have a clue. (I thought it was also unfortunate that at the same meeting, Joe Barton, probably the person most able to move the transition along, disclosed that he had recently purchased an NTSC television for his personal use. Leadership by example?)

Much of the problem stems from how digital/HDTV has been

marketed. Rather than come right out and say that ATSC digital/HD widescreen television represents a completely new and incompatible TV STANDARD that is REPLACING the old analog/NTSC standard, digital high-definition television is being marketed as a premium tier product (with integral NTSC tuners), with the unspoken presumption that traditional analog television sets are just a lower tier in the mix.

The ordinary consumer has accepted that; the few informed consumers who have sought out guidance typically read that they can safely buy an NTSC set and not be concerned that it will become obsolete, that the analog shutoff will be years away and when it finally does happen, they can get an adapter. But at what sacrifice? Losing ATSC's benefits for years to come?

Fortunately, the information now in publications like *Consumer Reports* is a lot better than it was a year or two ago. I had thought we were finally making good progress until this proposed rulemaking was released, detailing the CEA-CERC petition.

"They state that no matter how committed a retailer is to the DTV transition, the 50 percent rule provides an imperative to over-order the potentially scarce non-DTV tuner products and to under-order the more expensive products whose prices may be driven down later as a manufacturer seeks to achieve a 50/50 balance.

"CEA-CERC state that this process and imperative have been present in the 36 inch screen size and above market during the current 50 percent environment, in which the costs of the DTV tuner accounts for a much smaller percentage of product cost."

I was amused by the suggestion that "no matter how committed a retailer is to the DTV transition," there would still be a problem. Considering that a successful DTV transition requires the sale of ATSC televisions, it seems strange that a "committed" retailer would support the transition by deciding not to carry *any* ATSC CRT rear-projection sets. CRT rear-projection sets have been the most affordable and most popular sets bigger than 36", as well as being arguably capable of presenting the best picture quality when properly adjusted. So why not offer at least a few of these models with integrated

digital tuners? Certainly *some* consumers want to receive OTA high-definition broadcasts. A "committed" retailer would be giving the consumer the good reasons why he should be buying those ATSC sets.

When the new Hitachi CRT rear-projection sets with integrated digital tuners came out last year, I wanted to look at them but could not find a nearby Hitachi dealer that carried those models. I did find an internet forum string on the availability of those sets. People active in these forums tend to be the best informed about the DTV transition, and therefore tend to favor sets with integrated ATSC tuners. Two posts in that string are revealing:

"Well I finally got a call back from someone at CC. Per Danny, the Senior TV buyer for Circuit City, they are NOT going to carry this model because it's a CRT RPTV with integrated tuner. But will carry LCD RPTV's with integrated tuner."

"I got the same reply as the store manager told me a tv with an integrated tuner is pointless because OTA in my area you can only pick up 3 hd channels but getting cable or satellite, you will get around 12-15."

In late February while preparing these comments I went to Circuit City and Best Buy to see if they were selling any high-def widescreen direct-view CRT TVs with integrated digital tuners (size range covered by this NPRM). Circuit City had two 34" high-end Sonys: one for $2000 and the other for $2200. These are very nice sets—hardly "entry-level." They had no cheaper ATSC sets.

When I asked the salesman if they had any more models with integrated tuners, he said no and immediately told me that they did not recommend models with integrated digital tuners. When I pressed for an explanation, he said you could only pick up a few local channels, suggesting instead that you could get local channels via DirecTV along with many other channels (they had a big DirecTV display and sold a range of DirecTV hardware). I told him not until later this year after DirecTV had launched a new pair of satellites would they be able to carry local channels in high definition, and only then in 12 major markets.

The more I talked about the ways you could receive HD

programming, the less it seemed he knew. He seemed to equate high-definition with "digital," as in "digital" cable, and "all-digital" DirecTV.

I asked if they carried any digital-to-analog converter boxes; he didn't know what I was talking about.

I found two ATSC receiver STB models there: one for $250 and the other for $400.

Then I drove to Best Buy. As with Circuit City, I couldn't find any rear-projection CRT sets with an integrated digital tuner (sets greater than 36"—experience with the sale of which is the premise for CERC's petition), but they did have two sets in my target category—25"-36", 16:9, CRT direct-view with integrated digital tuners: a 34" Sony for $1950 and a 30" Samsung for $950 (also available over some internet sites for about $840). I asked the salesman (nice guy) about the Samsung; he said that model was selling well (!).

I then started talking to him about the transition to digital TV; he had no idea what I was talking about. I explained that there were two standards (NTSC and ATSC), that local TV stations were broadcasting two separate signals, one analog and one digital, and that possibly as soon as end-2006 they would be shutting off the analog signal (I explained who would lose their picture and who would keep theirs). He was shocked! He said "Congress won't let them do that!" I said Congress passed the law in 1996. I told him about proposals for subsidizing STBs, the upcoming labeling requirement, etc. — all of this was news to him.

At one point when he said something that I took issue with, he said that's what "they" told them to tell the customers. A couple of years ago when I asked if I could see high-definition programming on an HD set, a Best Buy TV salesman told me that only one set had an HD tuner attached. He switched on the gorgeous HD broadcast programming for half-a-minute, and then switched back to the stock analog in-store loop. When I asked about that, he said it was store policy not to show high-def programming on the high-def sets.

I asked again this time about where they got the canned programming they were displaying on all of their sets. This latest salesman said they had a DVD "box" in the back. I explained the difference in

resolution between DVD and HD; he thought they "upconverted" it for the HD sets; I explained what that was. Who knows what the feed was? To my eyes, it didn't look like HD.

Should a consumer be able to see the difference between high-definition and SD when making a purchase? Should the consumer know about the impending cutoff of NTSC broadcasts when buying a TV? Should TV sales people actively discourage consumers from buying ATSC television sets? What do you think?

The most affordable path from NTSC to (integrated) ATSC in big (over 36") widescreen sets is with CRT rear-projectors. Neither Circuit City nor Best Buy (in my area at least) are selling these (obviously they will be this summer when the 100 percent requirement for larger sets kicks in).

For smaller sets (25" - 36"), the path of least resistance is CRT direct-view sets. My local Circuit City and Best Buy stores each carried two models of these, although neither carried the most affordable sizes/models. CRT sets may be bulky and heavy, but the technology is mature and the picture quality is excellent. (I will address the cost penalties of converting "HD-ready" sets to ATSC later.)

So the question is, what proportion of informed consumers would choose the ATSC sets if both ATSC and NTSC sets were equally available? By informed, I mean that the consumer knows: 1) what actual high-definition programming looks like, 2) that TV stations are now broadcasting two separate signals—analog and digital, 3) that digital transmission power and coverage will (hopefully) soon provide service at least equal to analog, 4) that programming is migrating to the 16:9 format, 5) that programming on TV stations' digital channels will (hopefully) soon mirror their analog programming (simulcasting), and 6) that analog broadcasts will soon be shut off. As the FCC has noted, consumers expect that any TV they buy will receive and display over-the-air programming out-of-the-box after being connected to an antenna.

The FCC says it wishes to avoid imposing undue costs on consumers by mandating ATSC tuners. TV prices have always fluctuated depending on the maturity of the technology. I paid $875 in 1986 for my

current 27" Sony (a big set back then). A comparable set today would cost about $300, but in today's dollars I paid about $2000 (by my rough calculations) for that set in 1986. Everybody did. Today $2000 will buy a much bigger, much more sophisticated set with an integrated ATSC tuner. A 26" ATSC-equipped widescreen HD set can be had today for something less than $700. By historical standards, that is a bargain that in no sense can be described as imposing undue costs. These affordable prices exist without benefit of an ATSC tuner mandate; prices can be expected to drop significantly when mid-sized ATSC sets are produced in large numbers in a few months in response to the existing 50 percent ATSC tuner requirement. (assuming you keep the requirement in place)

Some people argue that consumers with cable and satellite service should not be forced to pay the differential for an integrated ATSC tuner. But how much does cable or satellite service cost the consumer over the life of a television set? Ignoring the fact that satellite service does not now include local high-definition network programming (ditto for some cable service), ignoring the higher costs for the digital/HD service tier, as well as the cost for special HD hardware purchase or rental, we can roughly estimate the average programming cost at $60/month over a TV set's ten-year life, which is $7200 (or $14,400 if the TV lasts 20 years); let's just say $10K. If you have more sets connected, expect to pay more.

The marginal cost of an integrated digital tuner is trivial by comparison, and it buys you free programming for the life of the set. Even though you get an extra 100 or so channels for that $10,000 (only a few channels of which are likely to be watched), any consumer who can afford $10,000 for cable or satellite service (on top of the cost of the set) is unlikely to be burdened by the small marginal ATSC cost, especially if he or she is otherwise informed about the DTV transition.

It seems safe to conclude that there are substantial numbers of consumers who will affirmatively want to purchase ATSC television sets (again assuming that consumers know about the DTV transition). The reported 19 percent of households (I like 19 percent better than that other 15 percent figure) that rely exclusively on over-the-air network broadcasts for their TV programming certainly would want integrated ATSC tuners. These

same households are more likely to buy a set in the 25" to 36" size range as their primary television than a larger more expensive set, and therefore it is certainly possible that this 19 percent of households accounts for more than 19 percent of mid-size sets.

If these 19 percent of households are forced to buy an NTSC set in the coming year because mid-size ATSC sets are not readily available, or they are uninformed, they will be harmed. First, they will not be able to enjoy the digital high-definition programming that more affluent consumers have access to. Second, they will later be forced to buy either a separate ATSC STB (that may cost as much as their almost-new NTSC TV) or a D/A converter box, or they may feel compelled to upgrade to a new ATSC television in a few years, long before the useful life of the first TV purchased has lapsed.

The second class of consumer that will certainly want to purchase an ATSC television are those people who have cable or satellite connected to one or more primary sets, and plan to use the new ATSC television as a secondary set (for kitchen or bedroom, etc.) for viewing only over-the-air network programming. Supplying satellite or cable service to only the main TV in the house saves them money, and the secondary sets are typically smaller than 36". These households may also purchase the ATSC television as their primary set, with the expectation that it will later become a secondary (antenna) set when they replace it with a bigger, better set as technology evolves (SED, OLED, 1080p, etc.). How many consumers fall into this class? If we're talking about informed consumers, my guess is about 40 percent of mid-size TV purchasers. Feel free to use your own estimate.

The third class of ATSC buyer is the person who simply thinks that a TV (every TV) should be able to tune in free broadcast programming. Even if the set is served by satellite or cable, during the next two or three years many cable and satellite customers will not have access to high-definition network programming via those services and will need an antenna to get them. Many others will simply want to retain the option of unplugging from pay TV in the future. And because we're still talking about informed consumers, they know that NTSC tuners just won't do. What percentage is in this third class? Another 30 percent?

That adds up to at least 90 percent, which is a lot more than 50

percent.

Of course if you're considering only the purchasing choices of uninformed consumers, the answer may be very different. Is the FCC predicating its decision on the premise that consumers will be kept in the dark in order not to disrupt NTSC sales?

So what are the alternatives to the purchase of an ATSC television? What fate will the consumer face after buying a 480i NTSC set or an HD-capable NTSC set?

Consumers buying a traditional 480i NTSC set during the next year who are unaware of the ongoing transition to a new U.S. TV standard are likely to discover that oversight within the next couple of years. This consumer is not going to be happy, especially if he or she relies on free over-the-air programming.

That consumer will have two choices at that time: 1) buy a new ATSC set in order to be able to see the high-definition widescreen programming that his neighbors are watching, if he can afford one after just buying an NTSC set, or 2) if he can't afford that, buy a digital-to-analog converter box so that he can continue to use his almost-new television after NTSC broadcasts are shut off. More money in either case.

In the case of the converter box, he will have to figure out the cable connections and accept a remote control that may not provide the same utility as the one that came with his set. He is also likely to experience simmering anger every time he turns on the set, because neither the store nor the government warned him before he bought the NTSC set that it would not work with the new TV standard. The set will not display the improved HD video quality, and he has to watch all of the new 16:9 programming letter-boxed, which renders his picture size smaller than the screen size he thought he was buying.

On the plus side, he won't have to worry about anti-piracy technology issues because the output from his new converter box has already been substantially degraded from the original signal.

So after spending money on a new NTSC TV, and yet more money on a converter box, his frustrations will likely drive him to go out and buy the new ATSC set that he should have bought in the first place. More money; add

that into your calculations.

Consumers who buy HD-capable NTSC sets during the next year will face a different set of issues. Some will be happy with their purchases: those people who can afford to pay for digital cable service in areas where cable carries the network high-definition feeds, and who also can afford to connect that cable service to all the sets in the household. Satellite subscribers who have purchased high-definition satellite receivers that also include an ATSC receiver may also be satisfied.

But others may get their "HD-ready" set home and discover that while DVDs look pretty good, broadcast programming is not as good as they expected (because it's standard definition NTSC programming). So it's back to the store to buy a separate ATSC receiver. Circuit City (web site) is selling them for $230 to $400, depending on the model ($300 for middle-of-the-road models). Oh, and then he'll need a good-quality cable to connect the STB to the set. Hopefully he bought an HD-capable set with a couple of HDMI inputs, to avoid possible anti-piracy down-conversion issues. And hopefully the ATSC STB the store sells him will also have an HDMI output. I asked the Best Buy I went to if they carried HDMI-to-HDMI cables; the nice salesman pointed me to the one they had; it cost $100. So our consumer is out the door for just $400 ($300 plus $100) or so added to the initial cost of his HD-ready/capable NTSC set. More money.

Once he gets home, he has to figure out how to hook up the STB to his set. Maybe his set has only component inputs; back to the store for a different cable. Then he has to figure out how to use the two remotes to get the programming he wants on the screen. All of this assumes that the STB will work with his particular set; plug-and-play is nice when it actually works. Maybe he has a technically-capable friend. In any case, the STB adds clutter, extra cables and an extra power cord needing a spare receptacle (go out and buy a power strip?).

An integrated ATSC TV set avoids all of those problems; it works like the consumer expects it to. And when you add all the subsequent costs (beyond the initial first purchase), an integrated set will almost certainly cost the consumer less.

An ATSC STB includes not only a separate ATSC receiver chip,

but also a chassis, a cabinet, a separate power supply and power cord, assorted switches and jacks and fuses, a remote control, an instruction manual, its own packaging, handling, and shipping costs, etc. Plus a $100 cable to connect it to the TV (You can certainly find a cheaper cable, but the typical consumer will just buy what the TV store has.). The integrated ATSC set needs only the chip (and that same chip likely performs many of the other functions of the TV).

CEA-CERC would have you believe that ATSC tuners are frightfully expensive, compared to the cost of a mid-size HD-ready NTSC television. The FCC doesn't want to impose undue costs on the industry or the consumer. I've already contended that integrated ATSC sets on the market now are a bargain to the consumer from a historical perspective. But I'm willing to write some more.

First, the CEA-CERC complaint (in footnote 1 of the NPRM) that an ATSC tuner is not a simple device like an NTSC tuner, but rather is a "computer," is trite and ingenuous. Does CEA-CERC think we're back in 1957 when vacuum tubes filled the guts of TVs? Computers are in everything today: cars, watches, TVs, toasters, and even respectable teddy bears. Of course an ATSC tuner is a computer, but so what? What's their point?

With today's advanced digital-TV-on-a-single-chip designs, the digital tuner is actually only one section of the "computer." If you put it all on a chip and make ten million of them, the digital tuner part is going to be cheap. The price for the single multifunction chip covers a lot more than the cost of the digital tuner.

Digital TVs have been in development for more than 10 years; digital tuners are in their umpteenth generation (well, at least fifth).

At the January 2004 CES, ATI announced its Xilleon 210VC chip ("world's first digital terrestrial and Cable Plug-and-Play Television on Chip"), including NTSC and everything but the kitchen sink. A lower cost version with fewer bells and whistles was also announced, all of this over a year ago. By the end of 2004, ATI had shipped five million HDTV chips.

A year ago the Broadcom BCM3520 single-chip DTV receiver was out, with exceptional 8-VSB performance (a bugaboo in years past).

By June of 2004 ATSC had completed work on its recommended

practices for broadcast digital television receiver performance. Sensitivity, selectivity, interference rejection, multipath handling. No more excuses.

By August LG/Zenith's fifth generation demodulator chip was winning kudos from 8-VSB's biggest former detractors. For years TV makers had resisted integrating ATSC tuners in their sets because of mediocre performance (multipath problems, etc.). ATSC receiver technology has matured to the point that there is no excuse for not installing them.

By CES 2005 this past January lots of companies were hot to sell their ATSC tuners:

Zarlink Semiconductor and Thomson's plug-and-play tuner module incorporated a simplified single-conversion architecture that significantly trimmed tuner costs compared with dual-conversion designs.

STMicroelectronics showed off a high-performance single multi-standard chip HD demodulator that enables "NIM manufacturers and set-top box makers the ability to cost reduce their system while giving viewers the advanced features they now expect as standard within the new fast-growing HD market." Full production of the $8 (large volumes) product was planned for first quarter 2005.

Philips Electronics announced a new full-featured ATSC chip (also includes NTSC reception) designed to also perform other functions needed by LCD sets. ATSC TV sets using this chip are expected to be in volume production by the third quarter of 2005.

Broadcom was marketing its BCM3560 high-performance integrated ATSC tuner-on-a-single-chip. This chip also supports NTSC and digital cable.

There are now many choices of ATSC tuners available to set manufacturers. Many or most of these integrated chips incorporate NTSC and digital cable tuners, as well as other functions that will need to be included even in "HD-ready" NTSC sets. It seems counterintuitive to almost go out of your way to leave out the ATSC tuner function.

25" to 36" sets are sold in large quantities. The FCC has to realize that maintaining a requirement for integrated ATSC receivers in this size set is the best way to obtain large volume production and therefore economical prices. Foregoing *any* requirement, 50 percent or 100 percent, for another year

will only serve to keep prices from dropping further for chips with ATSC capabilities.

Consumers will suffer, both financially and by being fast-talked into buying NTSC sets that will preclude many from enjoying the benefits of HD quality for years to come. Typical consumers going to big electronics stores assume there will be a good selection of TV sets, and if they are told they need to buy a separate digital receiver for a few hundred dollars in order to receive over-the-air HD broadcasts, they will think that is what they have to do. Then they'll be handed the $100 cable to connect the two devices. I suggest that a large majority of *informed* consumers would choose an ATSC set over an NTSC set, and they should not have to bear the extra expense and frustration of being forced to cobble one together from parts.

Many senior citizens and others will simply not be able to cope with anything more complicated than an integrated digital television set.

Everything hinges on consumers being informed about the basics of the transition to digital television (i.e. two distinct and incompatible television standards, NTSC and ATSC, with NTSC being phased out). This is not happening.

A digital-reception non-capability labeling requirement would have made all the difference. It is unfortunate that the FCC decided to allow a year to pass between the time it announced its labeling requirement and the time that it will go into effect. That was a mistake. It doesn't take a year to print and apply labels.

It is clear that the token voluntary educational efforts have been wholly inadequate.

Industry educational efforts have glossed-over and avoided telling consumers about the transition. CERC representatives met with nine members of the FCC's Media Bureau in March 2004 to persuade the FCC not to impose a labeling requirement. If CERC is truly sincere about educating the consumer, why would they object to a label that would ensure the consumer had critical information about the transition to ATSC before he committed to the purchase of an NTSC set?

And based on my experience at my local Circuit City and Best Buy stores, why don't they even tell their own salespeople about the DTV

transition?

The materials presented by CERC at the March meeting came from local Washington DC suburb member stores. It may be that consumer/salesperson education and training are more sophisticated at DC-area stores. I lived in the DC area for many years; consumers there are generally more educated and better informed, especially regarding Federal government initiatives. (And it can also be expected that FCC staffers will be visiting those stores.) Nevertheless, my reading of the educational materials even at those DC-area stores seemed to confirm that consumers are not being told at the point of purchase that the U.S. is transitioning from NTSC to ATSC television standards and that NTSC support will soon be terminated.

Instead, CERC (in its 3/25/04 ex parte documentation letter to the FCC) says that "Many or most products capable of displaying HDTV are merchandised with reference to cross-promotions of free HDTV cable or satellite programming." (inducing the consumer to commit to a $10K long-term obligation) That is consistent with my experience—promotion of expensive cable and satellite in preference to the reception of free over-the-air HD programming.

CERC says it promotes HD and HD programming, presents product-specific information, and presents information on the "pros and cons of the various means of display (direct view CRT, Plasma, and LCD, and the various fixed pixel and CRT rear-projection methods)." All very good, except that has no bearing on the upcoming shutoff of NTSC broadcasts and the implications for buying an NTSC set.

CERC says it merchandizes "both ATSC broadcast receivers and MVPD receivers or converters . . . to acquire HDTV programs." These products are add-ons. Consumers who need or want to be able to receive over-the-air ATSC broadcasts should not have to buy extra receivers or converters to do that; they should be able to buy an affordable ATSC set that makes getting free HD programming easy.

I believe, for reasons already stated, that well over 50 percent of informed consumers would today prefer integrated ATSC televisions. I recently contacted an independent internet retailer who sells lots of TVs and carries sets both with and without integrated tuners. He said sales of

integrated ATSC sets compared to HD-ready sets were now running about 50/50. He expected that ratio to change to about 70/30 within the next few months. This supports keeping an early 50 percent ATSC tuner requirement.

CERC notes that information is available on retailer web sites, and that "Comprehensive consumer information is also available on non-retailer sites (e.g., CNET)." It's very true that lots of information is available from various web sites, including the FCC's, and TV industry news sites such as tvtechnology.com, but my experience with friends and relatives and strangers is that they do not know about these sites. It doesn't occur to typical consumers that they need to do web research on ATSC vs. NTSC sets because they don't know there is a DTV transition. The trusting consumer thinks he can ask the salespeople at the store for advice on which set to buy, or more likely typical consumers simply base their selection on their past experience with TV.

It is also likely that the households most relying on free over-the-air TV are the least likely to be internet-proficient.

CERC also says that explanations about HDTV and its advantages are found in its advertising supplements. I'm looking at one now; in the middle of a product description, after "Widescreen Projection HDTV Monitor," there is a tiny superscript "1" that looks like an errant mark or the top of an exclamation point, and near the bottom of the page in tiny letters is the footnote "To receive digital content, a digital receiver is required. Sold separately." I'm sure this suffices as a legal disclaimer, but it's not likely that many consumers will read the note, or know what it means. It tells them they need to buy a "separate" receiver costing hundreds of dollars. It certainly doesn't say they can buy a similar set (from someone else) which has a digital receiver built-in for less money than the separate pieces, nor warn that the NTSC tuner that *is* built in will stop working after analog broadcasts are shut off.

Educating consumers about the transition is the only way to substantially increase demand for ATSC sets (until ATSC tuners are uniformly mandated), and labeling now appears to be the only effective way to educate the consumer. If you want a speedy transition to ATSC television, you need

to put consumers on notice now that the end of NTSC television is near.

In the absence of more certain information on the NTSC shutoff date, it is still important to put the consumer on notice that a cutoff is coming, and soon. Here is some proposed language; hopefully the FCC or Congress will decide on a more certain (and early) final date this spring. Who knows?

The label should be affixed to the screens of all sets not having an integrated ATSC tuner. No tiny print.

> "This television set is not by itself capable of receiving and displaying digital over-the-air network broadcasts. When the transition to the new ATSC digital TV standard is complete, all NTSC/analog broadcasts will be shut off and this set will no longer be capable of receiving any over-the-air programming without the addition of a separate digital tuner or digital-to-analog converter box. The shutoff date for NTSC/analog broadcasts may be as early as December 31, 2006. Some local broadcast stations may elect to shut off their analog broadcasts earlier."

The last sentence reflects my belief that the FCC should grant any TV station's request to stop analog transmissions, after its digital signal has reached full coverage. Dropping analog transmissions, in fact, would make it much easier for those stations to bring digital up to full power (as well as enable some to remain financially viable). By forcing stations to maintain both analog and digital broadcasts, while at the same time ruling against dual must-carry, the FCC is creating a disincentive for network stations to fully support their digital channels. Stations know their markets; let them decide when the time is right to fully switch over to digital. Having only a digital channel resolves must-carry issues.

The point being, allowing stations to voluntarily drop their analog channel early would promote consumer demand for integrated ATSC television sets, thereby supporting the DTV transition. Mandating continued universal analog broadcasts provides retailers with an excuse for not selling integrated ATSC sets.

The limited burden on a few consumers not able to receive one analog station would be much less than the burden on the many consumers now being persuaded to buy television sets that cannot receive high-definition OTA broadcasts. If stations are allowed to voluntarily drop their analog signals early, one at a time, impact on consumers will be minimal and *gradual*. More NTSC consumers will buy ATSC sets, and others will start buying converter STBs early, spreading out demand. Fade to black?

The FCC is burying its head in the sand when it insists that no consumer should lose a single station's analog signal before the final cutoff, even though a digital twin is available and only a fraction of one percent of the station's viewers would be affected. Where is the logic in that? Congress has already decided that the analog signals of *all* stations should be shut off when as many as 15 percent of television households would be affected. Face it, tens of millions of analog viewers are going to lose their signals, and soon, and the FCC should start getting used to that fact and act accordingly. People will adapt; the FCC clinging to the status quo will only make the transition more difficult.

The dam is about to burst and the FCC is preoccupied with plugging a slow drip. If a few scattered leaks were allowed to gradually open up, that early notice would give the NTSC masses downstream motivation and time to avoid a total deluge.

The alternative is for everyone in the country with an NTSC set relying on OTA broadcasts to run out on the day of the nationwide NTSC shutoff, all wanting to buy an STB. Now *that* would be chaos!

In comments submitted in response to a past FCC query, I argued that for any given size range, the FCC should impose a requirement that 100 percent of those sets be equipped with ATSC tuners by a date certain (no 50 percent prequel). That would have precluded market manipulation by the industry.

We're past that now, so where should we go from here?

The date for the complete phase-in of digital tuners for all size sets should be changed from July 1, 2007, to December 31, 2006, to coincide with the nominal statutory shutoff date for analog broadcasts. Nobody should be

buying a new NTSC TV these days, but certainly not after December 31, 2006, the day Congress has said NTSC broadcasts should end.

The existing July 1 requirement for ATSC tuners in 50 percent of sets 25" to 36" should not be delayed. It would be nice to make July 1, 2005, the date for 100 percent ATSC compliance for 25"-36" sets, but I suppose it's too late to do that.

To create consumer demand for ATSC sets, however, the effective date for labeling should be moved up from September to July 1, 2005. If the FCC thinks that this gives too little notice, at least make an interim labeling requirement apply to all sets displayed in a retail showroom (labels can be applied in the stores), and make the same labeling language mandatory for all print and internet advertising for NTSC sets (again, an "NTSC set" is one without an integral ATSC tuner, even if it is "HD-ready," since they all still have NTSC tuners).

The 100 percent date should be moved up at least to March 1, 2006, as the industry has indicated that it can meet that date. It would be even better to move the date to January 1, 2006, or sooner. Every new NTSC set that goes out the door is a blow to the digital transition.

In closing (finally, you say), HD/digital/ATSC is not a premium tier; it is standard, normal, ordinary TV now. We're far past the halfway point in the DTV transition. ATSC should be considered as *the* U.S. television standard. Marketing it as premium TV gives the impression that NTSC continues as the baseline standard, making it more difficult to create consumer demand for integrated ATSC tuners.

If digital television is considered to be the standard, then the broadcast network digital program lineup should mirror 24/7 their analog feeds (simulcast requirement) so consumers can dump NTSC entirely (simplifying program selection). High-definition digital television is no longer a novelty. The FCC's reasoning for abandoning its simulcast requirement so that the networks could air "additional innovative" programming on their digital channels is no longer valid, if it ever was. Does the FCC consider the digital channels as a supplement to the analog channels, rather than as a replacement? Is the same programming "innovative" on

digital TV but not on analog? Is it "innovative" simply because it is produced in high-definition?

Only if HDTV is considered to be a novelty would there be a reason to authorize special HD demo programming, shown in lieu of the networks' regular shows. Hopefully digital TV has moved past that stage. Again, if you want to persuade consumers to buy ATSC television sets, you have to start acting like ATSC is the U.S. TV standard. Well, do you?

That means getting newspapers to list digital channel numbers in their TV programming supplements. Right now digital channels do not exist, at least in the TV supplement that I get. How are consumers supposed to know there *are* digital channels? If there are no digital channels, there is no digital TV. If the NTSC set in the store can tune in all the channels listed in the TV program listings, consumers are not likely to see that "ATSC" acronym on the label as a feature they need to understand.

Right now the consumer has to jump through hoops to learn about and convert to digital. The industry and government need to get past the "ongoing discussion" on the DTV transition, and get on with it. Make it easier for the consumer to switch to digital than to stay with analog. Get those NTSC sets off the shelves ASAP!